

Abstract

A computer network controller, preferably operative in a System Area Network (SAN), is described. In a SAN, such a network controller is implemented as a SAN Protocol Engine (SPE) for use in Host Channel Adapters (HCA) and Target Channel Adapters (TCA). The SPE is based on a programmable Multi-Context Micro Sequencer (MCMS) tightly coupled to a fully associative multi-context block (FACB), running dedicated instructions optimized for network protocols. Associated with the MCMS is a Data Buffer with a number of read and write ports. This enables the SPE to run different tasks in parallel. Attached to the MCMS is a link-dependent Packet Sender and Outbound Scheduler hereby called Network Protocol Engine (NPE). The SPE is capable of running multiple user-level RMDAs with implicit completion control.